JOHNSTONE STRAIT KILLER WHALE COMMITTEE

Management Recommendations

BC Parks
Province of British Columbia
BC Parks

Fisheries and Oceans
Pêches et Océans

92-05286/

Canadian Cataloguing in Publication Data
Johnstone Strait Killer Whale Committee (Canada)
Management Recommendations

Cover title.
Co-published by: Dept. of Fisheries and Oceans.
ISBN 0-7726-1533-0

1. Killer whale - British Columbia - Johnstone Strait. 2. Wildlife habitat improvement - British Columbia - Johnstone Strait. 3. Robson Bight Ecological Reserve (B.C.) 4. Marine parks and reserves - British Columbia - Management. I. BC Parks. II. Canada. Dept. of Fisheries and Oceans. III. Title.

QL737.C432J632 1992 333,95'9 C92-092142-6

LETTER OF TRANSMITTAL

We, the members of the Johnstone Strait Killer Whale Committee, duly appointed by the Minister of Parks for the province of British Columbia, and the Minister of Canada Fisheries and Oceans, have prepared the following report " Management Recommendations of the Johnstone Strait Killer Whale Committee", and fully endorse its recommendations.

Dated at the City of Victoria, Province of British Columbia, this

6 day of March, 1992.

Louise Goulet, co-chair, BC Parks

Ed Lochbaum, co-chair, DFO

Ian McTaggart-Cowan

John Fayne

Graeme Ellis

John Ford

Pieter Bekker

Nicholas May

Dale Seip

Ron Lampard

JOHNSTONE STRAIT KILLER WHALE COMMITTEE MANAGEMENT RECOMMENDATIONS

EXECUTIVE SUMMARY

Western Johnstone Strait is extraordinary killer whale habitat, having one of the world's highest concentrations of these mammals for four to five months each year. It is one of the best areas in the world to view and study killer whales. However, it is also an ecosystem that supports a variety of resource industries and human activities. These activities will continue, but highest priority should be given to the management of habitat for whales.

In May 1990, the B.C. Minister of Parks and the federal Minister of Fisheries and Oceans jointly appointed the Johnstone Strait Killer Whale Committee to examine the impacts of all human activities on killer whales in the Robson Bight (Michael Bigg) Ecological Reserve, and to assess the impacts of whale watching in other areas of Johnstone Strait.

In early May 1991, the Committee released a *Background Report* which outlined the major issues associated with the protection of killer whales in Johnstone Strait, and put forward a series of management options for public review and input. This input has been used to refine the Committee's recommendations or to determine new options.

As in the *Background Report*, the present document is structured according to major resource management issues, i.e. commercial fishing, whale watching, land access and forest management and to the major means of dealing with these, i.e. education, legislation and enforcement, and research/photography. For each topic, a brief rationale is given, the nature of the public input received is summarized, and recommendations are made. When recommendations cover more than one topic, they are presented in a general category to avoid repetition. Other issues raised by the public are also mentioned.

The Committee feels that all recommendations should be initiated within the next 12 months, with full implementation to be achieved within three years.

The Committee recognizes that the Johnstone Strait area is the subject of Native land claims and makes its recommendations without prejudice to eventual treaty settlement.

RECOMMENDATIONS

GENERAL

◆ 1

BC Parks should **manage the Robson Bight (Michael Bigg) Ecological Reserve as a sanctuary for killer whales.**

◆ 2

The Department of Fisheries and Oceans (DFO) should **immediately designate a Special Management Zone** in the killer whale core area of western Johnstone Strait (Fig.1, page 10). This Special Zone and Robson Bight (Michael Bigg) Ecological Reserve should be identified on marine charts.

◆ 3

Starting in 1992, DFO, in collaboration with BC Parks, should **establish a seasonal patrol vessel program in the Special Management Zone** to educate whale watchers, monitor their activities, and enforce whale watching regulations.

◆ 4

DFO and BC Parks should **immediately establish a Joint Management Committee on Killer Whales** to help implement the recommendations of the Johnstone Strait Killer Whale Committee.

EDUCATION

◆ 5

BC Parks should **maintain its visitor program** on killer whales **in the Robson Bight (Michael Bigg) Ecological Reserve** and vicinity.

◆ 6

DFO should **produce a pamphlet on whale watching** for wide circulation to provide information on killer whales and acceptable whale watching practices.

◆ 7

Consultation should take place between the Joint Management Committee on Killer Whales, DFO and affected commercial fishermen regarding appropriate behaviour around killer whales in the Special Management Zone; DFO should encourage and assist commercial fishing organizations to **provide special education programs for commercial fishermen regarding appropriate behaviour around killer whales.**

◆ 8

BC Parks and DFO should **support** the Regional District of Mount Waddington's **proposal for a whale interpretative centre** in the region, away from Robson Bight.

ENFORCEMENT AND REGULATIONS

◆ 9

DFO should **immediately enact regulations to close the Robson Bight (Michael Bigg) Ecological Reserve to all vessels**, except by permit, or as required for safety reasons.

◆ 10

DFO should, **as soon as possible, amend existing marine mammal regulations** to better protect whales from harassment, including controlling the discharge of firearms from fishing boats.

◆ 11

BC Parks should **improve the regulations of the Ecological Reserve Act** to better define the application and enforcement of the Act to control human activities on land in the Robson Bight (Michael Bigg) Ecological Reserve.

RESEARCH/PHOTOGRAPHY

◆ 12

BC Parks should **continue to support killer whale research in the Robson Bight (Michael Bigg) Ecological Reserve**.

◆ 13

DFO should **continue long-term monitoring of killer whale populations** on the B.C. coast, and **initiate new research** on killer whales outside the Robson Bight (Michael Bigg) Ecological Reserve, especially regarding the impacts of human activities.

◆ 14

Starting in 1992, an integrated research program should be implemented in cooperation with the Joint Management Committee on Killer Whales and the Tsitika Follow-up Committee to investigate land management impacts on killer whale habitat. Studies should include an expanded sediment monitoring program and a more detailed study of rubbing beach formation and maintenance.

◆ 15

DFO, BC Parks and the Joint Management Committee on Killer Whales should establish a **process to review killer whale research and photography proposals, issue permits**, and **develop a comprehensive monitoring program in the Special Management Zone**.

COMMERCIAL FISHING

◆ 16

Upon consultation with commercial fishermen, DFO should **eliminate mooring and commercial fishing** within the expanded boundaries of the marine portion of the **Robson Bight (Michael Bigg) Ecological Reserve** (Fig.2, page 13).

WHALE WATCHING

◆ 17

All whale watchers, including the general public, charter operators, photographers and film-makers, should be **required to adhere to general whale watching regulations**, except by permit.

◆ 18

BC Parks should **create a land-based whale watching park** in the western Johnstone Strait area, away from the Robson Bight (Michael Bigg) Ecological Reserve, after undertaking the necessary feasibility studies. BC Parks should **involve local Native people** in this initiative.

◆ 19

The Ministry of Tourism should work with **whale watching charter operators to establish a charter association** and develop a code of conduct.

LAND ACCESS

◆ 20

BC Parks should **expand the land portion of the Ecological Reserve** south and east to further limit access and provide a better buffer for the rubbing beaches; and **expand the marine portion of the Reserve one kilometre east** (Fig. 2, page 13).

◆ 21

BC Parks should **close the Robson Bight (Michael Bigg) Ecological Reserve** to all **access by land**, except by permit.

◆ 22

The Ministry of Forests should require Western Forest Products and MacMillan Bloedel to **continue access restrictions** in the **Schmidt Creek** and **lower Tsitika River** drainages.

FOREST MANAGEMENT

◆ 23

The Ministry of Forests should **immediately declare a five-year moratorium on all forest harvesting activities** in the **lower Tsitika drainage** below Catherine Creek and in the **entire Schmidt Creek drainage** (Fig.1, page 10) to allow completion of the sedimentation study and additional research on killer whales and their habitat.

◆ 24

The Tsitika Follow-up Committee should continue to **impose strict control on forestry practices in the upper Tsitika** drainage to minimize changes to natural flows and sediment regimes in the Tsitika River.

◆ 25

The B.C. Ministry of Forests should **include the Schmidt Creek drainage in the mandate of the Tsitika Follow-up Committee**, or provide for a similar management process.

OTHER ISSUES

- 26 The Joint Management Committee on Killer Whales should include in its deliberations the **concerns of Native people**, as well as those of the public and non-Native user groups; every effort should be made to **involve local Native people throughout the management process for the Special Management Zone**.

- 27 In order to ensure the continued presence of killer whales in Johnstone Strait, DFO should **continue to manage salmon stocks in a conservative manner** in this area.

The public repeatedly expressed strong concern regarding the **protection of old growth** forest in the lower Tsitika valley; and regarding the **aesthetics of Robson Bight** which they feel are of international significance and should not be altered by logging. No recommendations are made as these issues were outside the Terms of Reference of the Johnstone Strait Killer Whale Committee.

TABLE OF CONTENTS

Executive Summary i

Introduction 1

General Recommendations 3

Education 4

Enforcement and Regulations 6

Research/Photography 7

Commercial Fishing 9

Whale Watching 12

Land Access 14

Forest Management 15

Other Issues 17

References 18

APPENDICES

Appendix A. Johnstone Strait Killer Whale Committee - Terms of Reference and Membership

Appendix B. Johnstone Strait Killer Whale Committee - Background Report Executive Summary

Appendix C. Suggested Structure and Membership of the Joint Management Committee on Killer Whales

LIST OF FIGURES

Figure 1. Johnstone Strait Special Management Zone 10-11

Figure 2. Robson Bight (Michael Bigg) Ecological Reserve 13

JOHNSTONE STRAIT KILLER WHALE COMMITTEE MANAGEMENT RECOMMENDATIONS

1.0 INTRODUCTION

Background

Western Johnstone Strait has one of the world's highest concentrations of killer whales in an accessible location. More than 190 whales may use Johnstone Strait each summer, primarily to feed on migrating salmon. Daily predictability of whale sightings and occasional "super-pods" of 50-100 whales in these sheltered waters offer unequalled opportunities for research and wildlife viewing of these complex and visually impressive animals. More than 90 percent of the killer whales that enter Johnstone Strait each summer also frequent the Robson Bight area to socialize, rest and rub on pebble beaches. Rubbing behaviours have been rarely seen elsewhere and nowhere else have these behaviours been observed with such frequency or involving such large numbers of whales. Recently, concerns have arisen that human activities such as whale watching, forest harvesting, and commercial fishing cumulatively threaten the whales' continued use of the area, particularly of the rubbing beaches.

In May 1990, the B.C. Minister of Parks and the federal Minister of Fisheries and Oceans jointly appointed the Johnstone Strait Killer Whale Committee to examine the impacts of all human activities on killer whales in the Robson Bight (Michael Bigg) Ecological Reserve, and to assess the impacts of whale watching in other areas of Johnstone Strait. The Committee's expertise to address the management issues includes whale biology, resource management in ecological reserves, commercial fisheries, tourism, forestry, and Native affairs (Appendix A).

In May 1991, the Committee released a *Background Report* outlining options for managing resources with regard to killer whales. The highlights of this report are outlined in Appendix B. More than 1300 copies of this report were distributed to seek wide public input on these issues. Specifically, the report outlined:

- the importance of Johnstone Strait and Robson Bight to killer whales;
- the type of human activities in the area;
- potential sources of disturbance to killer whales;
- considerations for management;
- a range of management **options** for commercial fishing, whale watching, land access and forest management; and
- preliminary **recommendations** for education, research and legislation.

Public Input

In June 1991, to involve the public, provide information and receive comments, the Johnstone Strait Killer Whale Committee hosted open houses/public meetings in Campbell River, Port McNeill, Victoria and Vancouver. The underlying theme of this public program was "How can we best ensure that killer whales continue to use Johnstone Strait and Robson Bight in the spectacular concentrations and unique manner that they do presently?"

Members of the public were given the opportunity for five minute presentations. In addition, written submissions were accepted until July 31, 1991. A comment sheet accompanied the *Background Report* to help the participants organize their comments and recommendations on the information contained in the report.

The Committee was looking for opportunities to work with the public to prepare workable recommendations. In reviewing the public's comments, they have tried to identify the plan's weaknesses and look for suggestions which could be incorporated into the proposals. Public involvement was not designed to ask participants to identify preferred options, therefore the results do not reflect a vote either "for" or "against" any particular option.

A total of 633 individuals attended the four days of public meetings, with 96 completed comment sheets, over 150 letters and briefs submitted, and 105 presentations heard. Particular points of this public input are brought up in each section of this document; a more detailed account of public input is summarized in a separate report - *Johnstone Strait Killer Whale Committee - Public Response Summary*. General highlights are given here:

. The majority of public participants who filled in comment sheets indicated they were satisfied or very satisfied with the public input process.
. All recognized that Robson Bight is a resource of international significance, and that no action should be allowed that would damage this resource.
. All, including the user groups most likely to be affected by the Committee's work, indicated their willingness to abide by the Committee's recommendations if it was clearly shown that these were necessary to ensure the continued presence of killer whales at Robson Bight and in Johnstone Strait.
. Many recognized that there is definite need to control whale-oriented activities outside the Robson Bight (Michael Bigg) Ecological Reserve.

The Committee's approach

The Johnstone Strait Killer Whale Committee has attempted to assess the effects of resource management on killer whales, based on available information. Although all the data necessary to make the most informed decision may not be available (and may never be), the Committee has used its best judgment and intends to err on the side of caution.

To formulate its recommendations, the Committee has utilized the following ground rules:

- The primary objective is to ensure the continued presence of killer whales in Johnstone Strait and to maintain traditional patterns of use and occurrence.
- Decisions will give priority to environmental concerns but will also consider economic and social concerns.
- Fairness and equity will be objectives for decisions regarding human resource use.

The Committee recognizes that some recommendations may be hard to accept for particular groups. But the Committee, as did all interest groups in their public submissions, acknowledges that the killer whale values found in western Johnstone Strait are truly unique and that nothing should be allowed that would destroy these values. The Committee, whose members hold very different views, unanimously endorsed the recommendations made in this report as all felt strongly that these are required to ensure adequate killer whale protection. The Committee asks for all groups' support in making these recommendations work.

The Committee's recommendations are divided into sections on education, enforcement and legislation, research/photography, commercial fishing, whale watching, land access, and forest management. A general section deals with those recommendations which are more universal. Other issues brought up by the public are also mentioned.

Wherever possible, the agency responsible for implementation is identified. The Department of Fisheries and Oceans (DFO) and the Parks Division (BC Parks) of the Ministry of Environment, Lands and Parks are mostly identified to carry out recommendations as they are primarily responsible for killer whales and their habitat in this area.

The Committee feels that all recommendations should be initiated within the next 12 months, with full implementation to be achieved within three years.

The Committee recognizes that the Johnstone Strait area is the subject of Native land claims and makes its recommendation without prejudice to eventual treaty settlement.

2.0 GENERAL RECOMMENDATIONS

The Robson Bight (Michael Bigg) Ecological Reserve is a very special place. While in Johnstone Strait, killer whales spend up to a third of their time in the Reserve, resting, socializing or rubbing. These activities are not observed anywhere else with such frequency and intensity. The Committee feels that this phenomenon, which is of international significance, needs the highest level of protection. The Reserve should be "a place for the whales".

Much attention has been focused on the Reserve with whale watchers, photographers and researchers all wanting to be in an area known internationally for its importance to killer whales. Management efforts over the last few years by BC Parks have almost eliminated whale-oriented activities from the Reserve.

However, the Reserve protects only a small portion of the "core" area killer whales frequent during the summer (Fig.1, page 10). This "core" area includes western Johnstone Strait, Broughton Strait, Blackfish Sound and eastern Queen Charlotte Strait. Most whale watching and research activities now take place in this core area outside the Reserve, with many instances of whale harassment being reported. Yet, no active management of these activities currently takes place outside of the Reserve. The Department of Fisheries and Oceans is key to managing such activities in the core area because it is responsible for the management of marine mammals.

The public repeatedly voiced concern for the protection of killer whales and their habitat, and indicated that they felt that the Robson Bight (Michael Bigg) Ecological Reserve should be reserved for whales, and that human activities in this reserve should be severely limited. They also identified the need to control human activities, especially whale watching, outside the Reserve to prevent whale harassment. The public and concerned user groups expressed the desire for an ongoing dialogue with the Killer Whale Committee or its successor to deal with these issues, and suggested potential structures for such a dialogue, including using a similar committee structure to that of the Tsitika Follow-up Committee.

We need to integrate management efforts by various agencies; to integrate actions undertaken in the Reserve and in the larger core area; and to involve user groups and the public to ensure the effective protection of killer whales. To respond to these needs and to ensure an integrated implementation that will respond to changing conditions and new information over time, the Committee recommends that:

- 1 BC Parks should **manage the Robson Bight (Michael Bigg) Ecological Reserve as a sanctuary for killer whales.**

- 2 The Department of Fisheries and Oceans (DFO) should **immediately designate a Special Management Zone** (Fig. 1, page 10) in the killer whale core area of western Johnstone Strait to serve as a focus to educate the public, reduce whale disturbance, and to serve as a model for management elsewhere on the B.C. coast. This Special Zone and the Robson Bight Reserve should be identified on marine charts.

- 3 **Starting in 1992**, DFO, in collaboration with BC Parks, should **establish a seasonal patrol vessel program** in the Special Management Zone to:
  . provide general public information and education on whales and whale watching in the Special Management Zone to minimize disturbance of whales;
  . monitor whale watching activities in the Special Management Zone; and,
  . where necessary, enforce legislation for the protection of killer whales.

- 4 DFO and BC Parks should **immediately establish a Joint Management Committee on Killer Whales** (App. C) to:
  . help implement the Johnstone Strait Killer Whale Committee 's recommendations;
  . monitor whale management in the Special Management Zone to ensure that protective measures for killer whales and their habitat remain effective;
  . provide a scientific subcommittee to identify priorities for killer whale research; and, review research/photography proposals and make recommendations on permits;
  . encourage cooperation with the public, Native and non-Native user groups in managing the Special Management Zone, by providing a forum for meaningful input by these groups.

3.0 EDUCATION

Education is the most powerful and appropriate tool to protect killer whales in Johnstone Strait. Public awareness has produced a profound shift in attitude towards the whales, from annoyance and fear, to enthusiastic interest. Most negative interactions with killer whales now take place due to lack of awareness. A broad-based education program is required to pass on our increasing knowledge and understanding of killer whales to the public and interested groups.

Most recreational boaters are poorly informed regarding their effects on whale behaviour. They often have fast manoeuvrable boats and engage in brief but intense encounters with whales. Education efforts in the future need to focus on this group as a priority.

No specific education program has so far been targeted for commercial fishermen. Fishing per se does not seem to impact the whales. Rather, activities associated with fishing, eg. use of skiffs to go ashore, mooring and discharge of firearms, are of concern.

Researchers and photographers are few in numbers, but spend many hours attempting to approach whales at close quarters. They too require education to minimize the impact of their actions. This can partly be done through the permit system.

The public also considered education to be the most important tool for managing interest in whales and felt that education programs should be widespread. Specific recommendations for education programs frequently identified commercial fishermen as a target group.

While the education program being carried out by BC Parks within the Robson Bight Reserve is largely successful and requires few modifications, efforts on the water outside the Reserve have been poorly funded and are inconsistent. DFO's marine mammal management tends to concentrate on commercially exploited species. Non-consumptive resource uses, such as whale watching, have not been viewed as commercial exploitation.

Education programs are also needed on land. It is most effective to inform people before they come in contact with the whales on the water. A whale interpretive centre proposed by the District of Mount Waddington would seem ideal for this purpose as this agency already plays a strong role in informing and educating the public. BC Parks and DFO could provide whale watching/information pamphlets for distribution and arrange to have public presentations on whales at that location, as part of their summer whale visitor programs.

Taking these considerations into account, the Committee recommends that:

- 5 BC Parks should **maintain its visitor program on killer whales in the Robson Bight (Michael Bigg) Ecological Reserve** and vicinity by:
  . updating its pamphlet on the Robson Bight Reserve and continuing to distribute it to visitors and local residents;
  . continuing its visitor information program at Robson Bight during the peak tourist season (late June to mid-September);
  . continuing its off-site interpretive component of the visitor program during the summer, giving weekly presentations at campgrounds and other suitable locations such as Port McNeill and Telegraph Cove.

- (3) **Starting in 1992**, DFO, in collaboration with BC Parks, should **establish a seasonal patrol vessel program in the Special Management Zone** to provide general public information and education on whales and whale watching.

- 6 DFO should **produce a pamphlet on whale watching for wide circulation** to provide information on killer whale biology and acceptable whale watching practices.

- 7 Consultation should take place between the Joint Management Committee on Killer Whales, DFO and affected commercial fishermen regarding appropriate behaviour around killer whales in the Special Management Zone; DFO should encourage and **assist commercial fishing organizations to provide special education programs for commercial fishermen regarding appropriate behaviour around killer whales**.

- 8 BC Parks and DFO should **support** the Regional District of Mount Waddington's **proposal for a whale interpretative centre** in the region, away from Robson Bight, by providing pamphlets on whales, and organizing public presentations during the summer months.

4.0 ENFORCEMENT AND REGULATIONS

Even the best public education program is not enough to control all human activity affecting killer whales. Individuals or groups will still choose to ignore established guidelines for a variety of reasons. Appropriate legislation is needed to deal with these exceptions and to demonstrate government determination to protect killer whales and their habitat.

The public views unregulated recreational and commercial boat activity as a major issue in the protection of killer whales in the Johnstone Strait area. Most questionnaire respondents felt that protection of killer whales was the most important management issue, and that the Robson Bight Reserve should be a special place where whales were left free of any harassment. Responses indicated that improved legislation and enforcement should be implemented, along with a good education program. It was also suggested that regulations include a mechanism whereby citizens can report incidents of whale harassment.

Current legislation (the *Cetacean Protection Regulations* of the *Fisheries Act*) is designed to deal primarily with Inuit hunting of whales in the Arctic, and does not provide any special protection for killer whales in the Robson Bight Reserve. A recent prosecution in B.C. involving harassment of killer whales failed because there was no adequate definition of harassment. There are precedents for amending the Cetacean Protection regulations to include four or five general parameters to deal with whale watching. Factors to consider in legislation include distance from whales, boat speed, time allocation and number of vessels around any given pod of whales. There is also a need to deal with the discharge of firearms from fishing boats. The Committee on Whales and Whaling, an advisory body to DFO; other whale specialists; and all interested user groups should provide input to amend existing legislation.

There is also a need to control human activities in the terrestrial portion of the Robson Bight Reserve to prevent whale disturbance from shore, especially at the rubbing beaches. It is felt that the Ecological Reserve Regulations need to be improved to allow a better enforcement of the Ecological Reserve Act.

Based on these needs, the Committee recommends that:

- 9 DFO should **immediately enact regulations to close Robson Bight (Michael Bigg) Ecological Reserve to all vessels**, except by permit, or as required for safety reasons.

- 10 DFO should, **as soon as possible, amend existing marine mammal regulations** to better protect whales from harassment, including controlling the discharge of firearms from fishing boats.

- 11 BC Parks should **improve the regulations of the Ecological Reserve Act** to better define the application and enforcement of the Act to control human activities on land in the Robson Bight (Michael Bigg) Ecological Reserve.

- (3) **Starting in 1992**, DFO, in collaboration with BC Parks, should **establish a seasonal patrol vessel program** in the Special Management Zone to:
  . monitor whale watching activities in the Special Management Zone; and,
  . where necessary, enforce legislation for the protection of killer whales.

5.0 RESEARCH/PHOTOGRAPHY

Johnstone Strait is an ideal area for research and photography of killer whales given the sheltered waters, predictability of whale sightings, and relative accessibility. Also, increasing restrictions in other areas to undertake these types of activities, notably in the United States, have made the less controlled Canadian waters even more attractive.

Research and photography of killer whales have some characteristics in common. These activities can be highly valuable in providing information on the whales and their habitat. However, although small in numbers, researchers and photographers are frequently closer than 100 metres to the whales for extended periods of time. Mechanisms need to be put in place to screen research and photography proposals to strike a balance between the benefits derived from these activities and the negative impact they may have on the whales.

For the past 20 years, resident killer whales frequenting Johnstone Strait have been subjects of a long-term research program which has uniquely identified and tracked the lives of individual whales in the population. This database, which was spearheaded by the late Dr. Michael Bigg, is unparalleled elsewhere in the world. Also since 1987, the use of the Robson Bight Reserve by killer whales and the impact of human activities on whales in that reserve have been documented. Yet, there are still many questions regarding killer whale biology and distribution, the importance of habitat in Johnstone Strait and Robson Bight to these whales, and the possible impacts of human activities on the whales and their habitat. Given killer whale longevity, these questions can only be answered through long-term monitoring of their populations and habitats.

There is a need to ensure continuity for the research already undertaken, and to undertake new research to answer important questions about killer whales. However, we also need to ensure that research projects minimize redundancy and undue disturbance of whales while contributing to a better understanding of these animals and/or their habitat.

From comments received, it is apparent that the public recognized that current information is inadequate and the potential impacts are only speculative. Research was not seen as a priority for immediate implementation although it was viewed as important to an overall management scheme. Concern was also expressed regarding research techniques such as the use of radios to constantly monitor the locations of whales. Some thought that this technology was being abused to the detriment of the whales.

Photography and film-making of killer whales in Johnstone Strait and Blackfish Sound has become more numerous and increasingly demanding of high quality footage. Quality documentaries can be valuable in public education, especially as opportunities to see whales in the wild may become more restricted in the future. In the Robson Bight Reserve, these users are already restricted and require permits to operate. However, increased monitoring and control of such activities is also needed throughout the Special Management Zone as the area becomes increasingly well-known.

Film-making and photography were not seen as a major issue by the general public. However, charter operators and researchers working in Johnstone Strait are concerned about this use not being properly controlled. Suggestions for management included requirement for all commercial photographers to be accompanied by a licensed guide, for any approaches to whales closer than allowed by the general public.

Given these considerations, the Committee recommends that:

- 12 BC Parks should **continue to support killer whale research in the Robson Bight (Michael Bigg) Ecological Reserve** and in particular to monitor its use by killer whales and the potential impact of human activities on whales and their habitat.

- 13 DFO should **continue the long-term monitoring of killer whale populations** on the British Columbia coast; and **initiate new research** on killer whales outside the Robson Bight (Michael Bigg) Ecological Reserve, especially with regard to the impacts of human activities on whales and their habitat.

- 14 **Starting in 1992, an integrated research program should be implemented** in cooperation with the Joint Management Committee on Killer Whales and the Tsitika Follow-up Committee to investigate land management impacts on killer whales and their habitat. This program should include:

  . an expanded sediment monitoring program including the Tsitika drainage as well as Schmidt and Kaikash Creeks, with emphasis on the rubbing beach area.
  . a detailed study of the processes influencing the formation and maintenance of the rubbing beaches;
  . a study of basic habitat and killer whale ecology in the Reserve; and,
  . a study on possible impacts of logging activities on killer whales and their habitat in the Reserve, with blowdown being of special concern.

- 15 DFO, BC Parks and the Joint Management Committee on Killer Whales should **immediately establish a process to review killer whale research and photography proposals, issue permits, and develop a comprehensive monitoring program in the Special Management Zone**.

  In particular:

  . A **scientific subcommittee** should be established as part of the Joint Management Committee on Killer Whales to **review killer whale research and photography proposals** and make **recommendations to DFO on issuing permits**. This permit system would be used to:

    - monitor research and photography activities in the Johnstone Strait Special Management Zone;
    - screen proposals, especially those calling for close approaches to whales;
    - require that all research and filming/photography vessels with a permit to approach whales closely be clearly identified;
    - ensure that programs are bona fide, further knowledge of killer whales, and where possible, contribute to management needs; and,
    - ensure that in the Robson Bight Reserve, permits are issued only for those projects which will advance the knowledge about whales in the Reserve, and/or where it is demonstrated to be critical to the study design.

  . The scientific subcommittee should **develop a comprehensive monitoring program** to evaluate the success of management measures in the Special Management Zone.

6.0 COMMERCIAL FISHING

Several locations in the Robson Bight (Michael Bigg) Ecological Reserve are important for fishing. One of the most critical habitats for killer whales, the rubbing beaches, is located along a two kilometre stretch of coastline which is used by several seine boats for mooring and fishing. Robson Bight itself, where killer whales spend as much time as at the rubbing beaches, offers sheltered mooring from prevailing northwest winds and storms. And finally, some important fishing areas are located near the estuary.

The presence of fishing boats in the Reserve is often questioned by recreational boaters who are asked not to enter this area. Commercial fishermen currently enjoy a privilege of unrestricted access to the Reserve, unlike recreational boaters. Commercial fishermen, because they come under the jurisdiction of DFO, have not been a focus of a concerted management effort by BC Parks in the Reserve.

As a result, some fishermen may be unaware of the special status of the Robson Bight Reserve and utilize this area as they might any portion of unprotected coast, frequently discharging firearms and landing skiffs at the rubbing beaches. Commercial fishing in the Robson Bight (Michael Bigg) Ecological Reserve is currently the largest source of disturbance to killer whales. The discharge of firearms pose a threat to both killer whales and human life (research has been taking place at the rubbing beaches), and the presence of fishing boats at the rubbing beaches has been shown to prevent killer whales from using this area. The landing of skiffs on the rubbing beaches results in the immediate departure of killer whales from that area (Briggs, 1991).

Commercial fishing outside the Reserve has not been shown to unduly disturb whales, and fishermen and whales seem to pursue the same prey, salmon, without obvious conflicts. In fact, commercial fishermen are much more likely to regard killer whales with interest these days than with fear or annoyance as in the past. The Committee feels that little management efforts, besides the education program already recommended, need to be directed at commercial fishermen outside the Reserve.

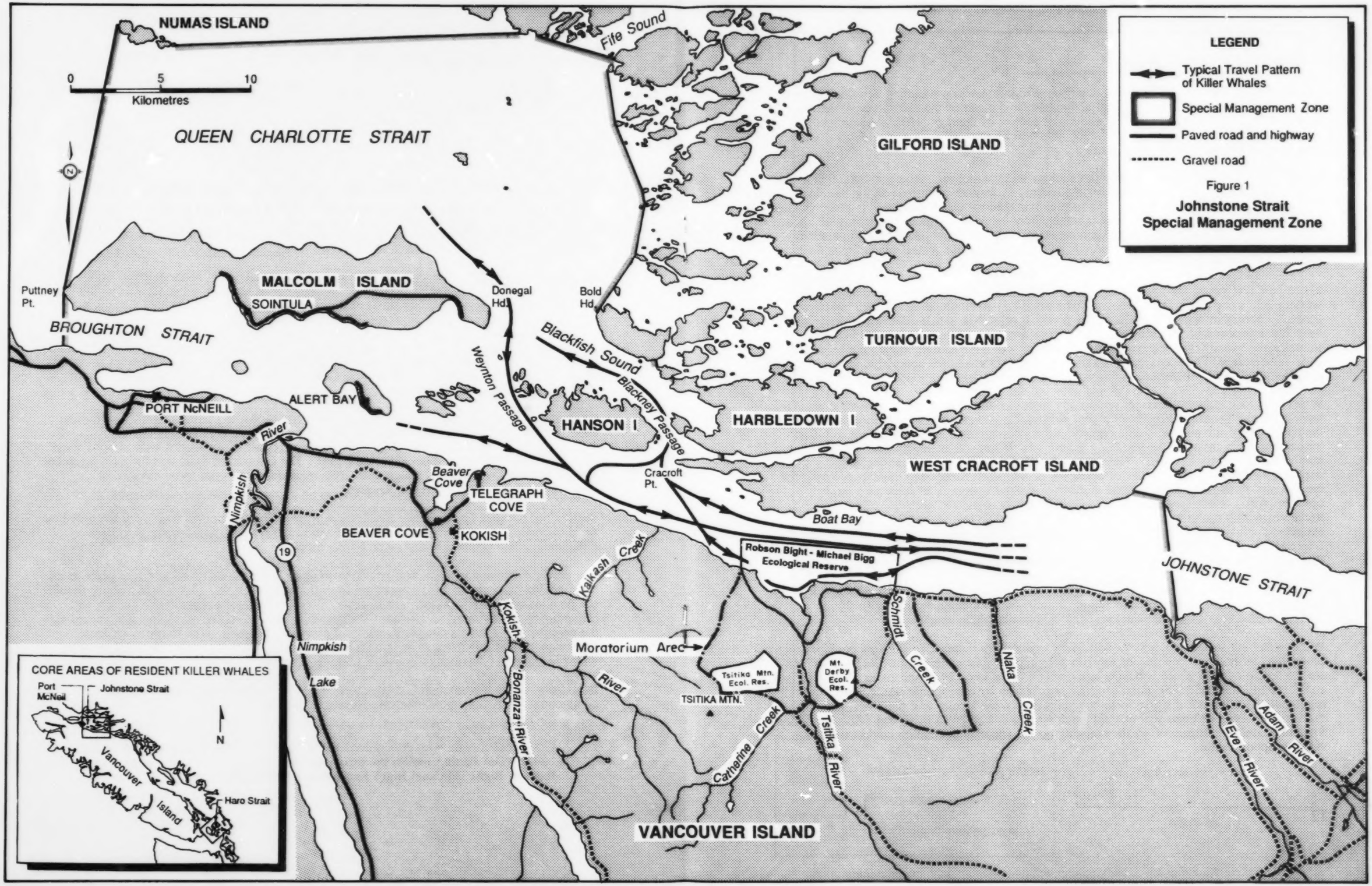
Such is not the case however, for the Reserve itself. The Committee feels very strongly that the disturbance of killer whales in the Bight and at the rubbing beaches needs to be eliminated. This position is supported by the public.

The public expressed concern that any harvesting of fish or shellfish should take place at all in an ecological reserve. Many members from the public felt that commercial fishing should not be allowed in the Robson Bight Reserve, although it was recognized that fishing was important to the economy of northern Vancouver Island. Concern was expressed regarding the potential for a backlash against whales if arbitrary measures were imposed on local fishermen. It was identified as important to enter into a process of education and consultation with commercial fishermen to ensure a positive outcome.

In addition to the consultation and education measures (◆ 7) already proposed for commercial fishermen, the Committee recommends that:

◆ 16

Upon consultation with commercial fishermen, DFO should **eliminate mooring and commercial fishing within** the expanded boundaries of the marine portion of the **Robson Bight (Michael Bigg) Ecological Reserve** (Fig.2, page 13).


NUMAS ISLAND
Fife Sound
0 5 10
Kilometres
QUEEN CHARLOTTE STRAIT
GILFORD ISLAND
LEGEND
Typical Travel Pattern of Killer Whales
Special Management Zone
Paved road and highway
Gravel road
Figure 1
Johnstone Strait Special Management Zone
MALCOLM ISLAND
SOINTULA
Puttney Pt.
BROUGHTON STRAIT
Donegal Hd.
Bold Hd.
TURNOUR ISLAND
Blackfish Sound
Weynton Passage
Blackney Passage
ALERT BAY
PORT NcNEILL
HANSON I
HARBLEDOWN I
WEST CRACROFT ISLAND
River
Beaver Cove
TELEGRAPH COVE
Cracroft Pt.
Boat Bay
Nimpkish
BEAVER COVE
KOKISH
19
Kaikash Creek
Robson Bight - Michael Bigg Ecological Reserve
JOHNSTONE STRAIT
Kokish
Schmidt Creek
Nimpkish Lake
Moratorium Area
Tsitika Mtn. Ecol. Res.
Mt. Derby Ecol. Res.
Naka Creek
Bonanza River
River
TSITIKA MTN.
Catherine Creek
Tsitika River
Eve River
Adam River
VANCOUVER ISLAND
CORE AREAS OF RESIDENT KILLER WHALES
Port McNeil
Johnstone Strait
N
Vancouver Island
Haro Strait

7.0 WHALE WATCHING

Management efforts by BC Parks have largely eliminated whale watching activities from the Robson Bight (Michael Bigg) Ecological Reserve, and many of the recommendations already made (◆ 5, 9, 10, 11) should bring additional control of these activities. As such, this discussion and the recommendations made here will be mostly concerned with what is taking place in the Special Management Zone.

Currently, most whale-oriented activities such as whale watching, photography and research are taking place outside the Robson Bight Reserve, in western Johnstone Strait, Blackfish Sound and Queen Charlotte Strait. No special management infrastructure is in place in that area, and whale-oriented activities have largely been left unchecked and uncontrolled. Many instances of whale harassment have been reported, and researchers have started to move away from Johnstone Strait to observe whales in an undisturbed state. Many factors are responsible for this state of affairs.

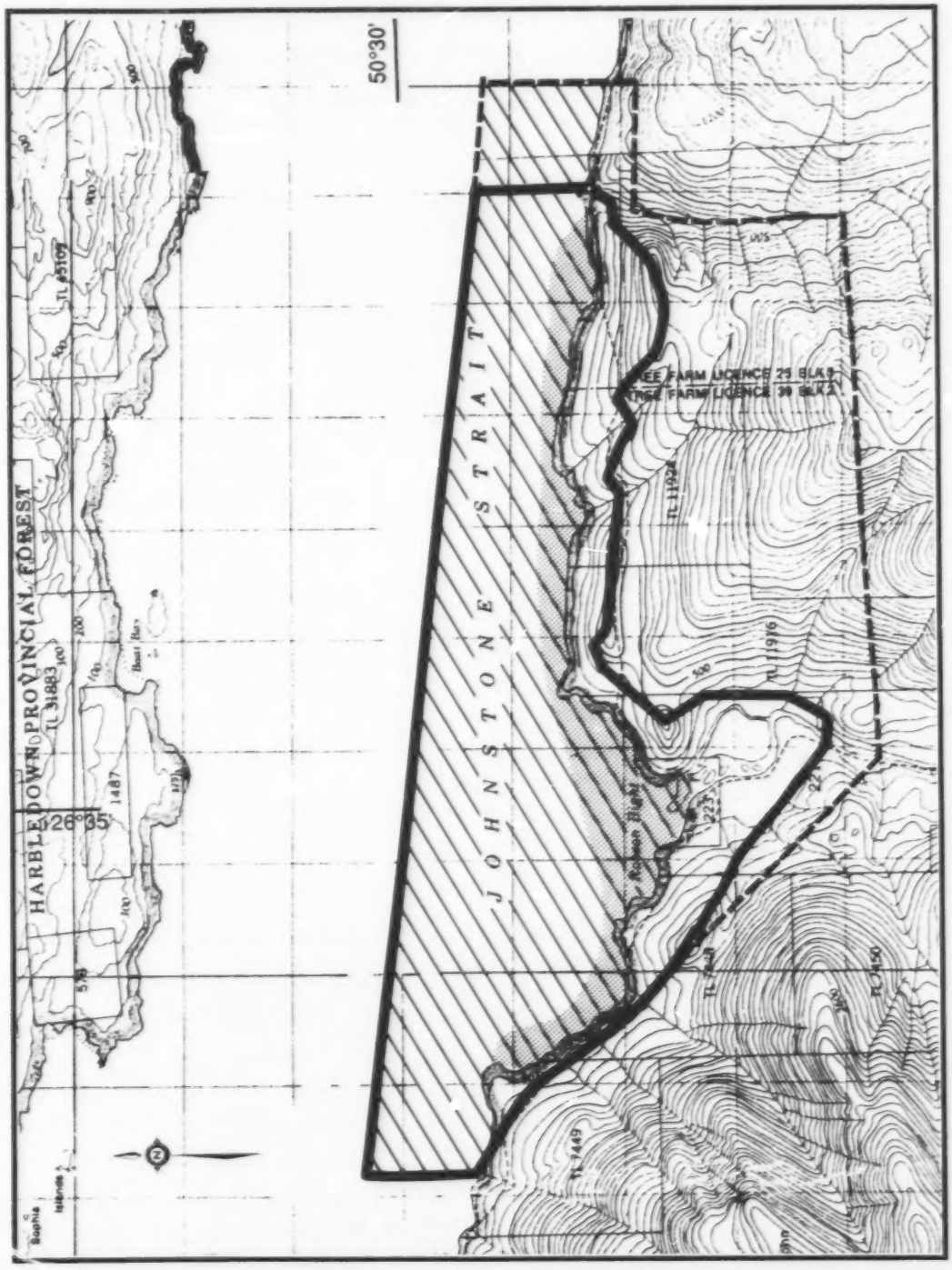
These past few years, the number of recreational boaters has increased dramatically in the western Johnstone Strait area; these numbers are likely to continue increasing. Boaters are generally poorly informed regarding their potential effects on whale behaviour. They often have fast manoeuvrable boats and engage in brief but intense encounters with whales. Recreational boaters will sometimes pursue whales, cut their path of travel, and approach pods very closely. There is a need to establish clear guidelines for acceptable whale watching practices, and to distribute these widely to all recreational boaters.

Whale watching charter operators are usually better informed on appropriate whale watching techniques and generally have been a very responsible group. Many operators contribute to the education of the general public regarding the importance of Johnstone Strait to killer whales and appropriate whale watching techniques. There are presently four full-time and a number of part-time operators. However, other than free market restrictions, there are currently no limits to the number of operators in Johnstone Strait, and there is potential for the industry to expand. The eventual number of charter operators in Johnstone Strait is a concern. Also, charter operators as a group are poorly organized with few education initiatives within the group. As a result, new or part-time operators often require an extended "breaking-in period" to identify whales and behaviours, and respond appropriately. It is possible that as the number of operators and competition increase to view the whales, that what is currently a fairly orderly industry may result in undue harassment of whales.

Public input has indicated widespread support for cessation of whale watching in the Robson Bight Reserve, increased control of marine-based whale watching in Johnstone Strait, continued education of whale watchers, and land-based whale watching.

Whale watching in Johnstone Strait will likely continue to increase as the area becomes more accessible, more developed and its tourism potential is more widely known. Special efforts are needed to control whale watching activities on the water. Mechanisms to do so are, first and foremost, a broader education program, backed-up by appropriate whale watching regulations spelling out distance to be maintained between whales and the boats, the maximum number of boats that can approach whales at any given time, etc. Another option for minimizing the impact of whale watching on the water is to develop land-based whale viewing opportunities.

Figure 2 Robson Bight (Michael Bigg) Ecological Reserve #111, Johnstone Strait, B.C. Proposed Changes.



LEGEND

Area heavily used by killer whales

Proposed expansion

No fishing and mooring zone

N.T.S N0. 92 L/7,10E

0 1 2 3 4

Kilometres

Objectives for land-based whale watching would be to broaden visitor knowledge of killer whales, give a marine/island-oriented experience, divert some water-based whale watching into a less intrusive activity, and complement current/planned whale watching infrastructure. This initiative would be especially well suited to involve local Native people to develop not only a centre for killer whale interpretation, but to also provide interpretation on Native culture and their special relationship to the whales. A good site needs to have frequent passes by whales, plentiful opportunities for viewing of other wildlife, potential for facility development (such as viewing platforms, interpretive displays, and picnic areas), and good access from Vancouver Island. Feasibility studies should be undertaken first to determine the best location and whether or not such a proposition is feasible. Many consider Cracroft Point on West Cracroft Island as being the best site for this purpose.

Given the above considerations, the Committee recommends that, for the management of whale watching in the Johnstone Strait Special Management Zone:

- 17

  All whale watchers, including the general public, charter operators, photographers and film-makers, should be **required to adhere to general whale watching regulations**, except by permit.

- 18

  BC Parks should **create a land-based whale watching park** in the western Johnstone Strait area, away from the Robson Bight (Michael Bigg) Ecological Reserve, after undertaking the necessary feasibility studies. BC Parks should **involve local Native people** in this initiative.

- 19

  The Ministry of Tourism should work with **whale watching charter operators to establish a charter association** and develop a code of conduct.

8.0 LAND ACCESS

Ecological reserves give priority to conservation, and are closed to human access when resource sensitivity warrants it. We know that land access disturbs whales in the Reserve. Whales were shown to immediately leave the rubbing beaches if somebody was on shore. Also, the estuary's fragile vegetation cannot support much trampling without damage.

Currently, land access to the Robson Bight Reserve is difficult. Developed logging roads in the Tsitika are four kilometres away from the Bight. The Schmidt Creek logging road is adjacent to the Reserve, close to the rubbing beaches. However, gates on both the Tsitika and Schmidt Creek roads restrict access many kilometres away from the Reserve.

Controlling access by erecting gates on logging roads is not always effective. Gates may prevent vehicular access, but they do not always deter people from walking or biking in. In addition, people often do not accept being denied access to logging roads. Trying to prevent access to the estuary and rubbing beaches from logging roads adjacent to the Reserve may prove impossible in the long term.

A primary motivation for people wishing to gain land access through the Reserve may be to view whales. This demand for land-based viewing will likely increase. However, the Reserve is not an acceptable area for this activity, because of the sensitivity of whales while rubbing to human approaches, and the lack of good opportunity for land-based viewing.

Public input demonstrated widespread support for restricting access to the Robson Bight Reserve. However, conceptions of how access should be controlled varied considerably, from providing interpretive facilities in the Reserve to eliminating the existing roads in the lower Tsitika, and between Naka Creek and Schmidt Creek.

Access to the Robson Bight Reserve needs to be prevented to maintain the very values for which this protected area was established. Increasing the size of the Reserve as well as preventing access on both water and land are necessary for this purpose. Additions to the Reserve are hereby proposed around the rubbing beaches, and in a small area west of the estuary to take blowdown risk into account (Lewis, 1989). Additional studies will eventually help to determine a final boundary for this Reserve.

Given these considerations, the Committee recommends that:

- 20

  BC Parks should **expand the land portion of the Ecological Reserve** south and east to further limit access and provide a better buffer for the rubbing beaches; and **expand the marine portion of the Reserve one kilometre east** (Fig. 2, page 13).

- 21

  BC Parks should **close the Robson Bight (Michael Bigg) Ecological Reserve** to all **access by land**, except by permit.

- 22

  The Ministry of Forests should require Western Forest Products and MacMillan Bloedel to **continue access restrictions in the Schmidt Creek** and **lower Tsitika River** drainages.

9.0 FOREST MANAGEMENT

Forest harvesting and associated management activities are taking place in the Tsitika watershed behind Robson Bight and in Schmidt Creek watershed, east and south of the rubbing beaches. There are concerns regarding potential effects of forestry activities on the adjacent killer whale habitat, especially the potential for changes in sediment delivery to the Bight and rubbing beaches. Other concerns include increased risks of blowdown of forests in the Reserve and impacts on fish habitat.

Forest management in the upper Tsitika is overseen by the Tsitika Follow-up Committee and the standards are among the highest in the province. There is no evidence that forestry activities have had any negative impacts on killer whales to date. However there are inadequate data available to assess logging impacts on sediment production. Detailed studies on sediment sources in the watershed were started in 1991. It will be several years before the results of that study are available.

We also need to recognize the unpredictability and magnitude of natural events in that area. A few years ago, high winds and major storms resulted in large blowdown areas in the upper Tsitika watershed. Recently (January 1992), blowdown has also been reported in the lower Tsitika around a cut block that was specifically designed to prevent blowdown, using the lessons that were supposedly learned from the experience in the upper watershed.

Forest management in Schmidt Creek has not been under the strict control that has occurred in the Tsitika. The impacts of harvesting in the Schmidt watershed are of equal concern because Schmidt Creek is the source of materials that produce the rubbing beaches (Hay, 1991). Therefore, information on sediment production is required for the Schmidt watershed as well as the Tsitika. Also, forest management practices in the Schmidt watershed should be as strictly controlled as they are in the Tsitika.

There was a very strong expression of public concern received by the Committee regarding the potential effects of forest harvesting in the lower Tsitika on the ecology of the Reserve and unique killer whale habitat. Verbal and written submissions were dominated with comments regarding the potential impacts of forestry activity in that area. Many people related effects of siltation, pollution, and increased access from logging road to concerns for protection of killer whale habitat. In contrast, responses on comment sheets indicated that this concern was secondary to the effects of whale watching.

Until we have a better understanding of the environmental factors that are at play in the Robson Bight area, it would be unwise to take any action which may jeopardize the continued use of this area by killer whales. We believe that logging and road building in the areas adjacent to the Reserve should be stopped until additional studies have provided a better understanding of possible impacts. Only then will we be able to determine a final boundary for the Robson Bight Reserve.

Given these considerations, the Committee recommends that:

- 23

  The Ministry of Forests should **immediately declare a five-year moratorium on all forest harvesting activities** in the **lower Tsitika drainage** below Catherine Creek, and in the **entire Schmidt Creek drainage** (Fig.1, page 10), to allow completion of the sedimentation study and additional research on killer whales and their habitat.

  At the end of the five-year moratorium, the Joint Management Committee on Killer Whales should review all evidence and make recommendations for action to the appropriate ministries.

- 24

  The Tsitika Follow-up Committee should continue to **impose strict control on forestry practices in the upper Tsitika** drainage to minimize changes to natural flows and sediment regimes in the Tsitika River.

- 25

  The B.C. Ministry of Forests should **include the Schmidt Creek drainage in the mandate of the Tsitika Follow-up Committee**, or provide for a similar management process to ensure that all resource values are taken into account in the preparation and implementation of a long-term resource management plan for that drainage.

Specifically, such a process should ensure that:
. access to this drainage continues to be restricted;
. a rate of cut is set that will not significantly alter natural flows or sediment regimes in Schmidt Creek;
. a forum is provided for public input and scrutiny; and
. an assessment is made, jointly with BC Parks, to determine requirements for additional land to ensure the physical integrity of the rubbing beaches.

10.0 OTHER ISSUES

Public submissions repeatedly dealt with some issues which were not included in the Terms of Reference for the Johnstone Strait Killer Whale Committee. The Committee feels that these issues should be brought to the attention of concerned government agencies. Recommendations are made on these issues when the Committee feels these are vital to the successful management of killer whales in Johnstone Strait.

Native Issues

Aboriginal land claims in the Johnstone Strait area remain unsettled and are of significant public concern as eventual land claims settlements may affect future management for killer whales in the area. Where projects or land use decisions might affect aboriginal subsistence activities on unoccupied Crown land, the Province has a fiduciary responsibility to undertake reasonable consultation with the affected Native groups.

The Committee recognizes that killer whales hold special and spiritual significance for the Kwakiutl peoples and recommends that:

◆ 26 The Joint Management Committee on Killer Whales should include in its deliberations **the concerns of Native people**, as well as those of the public and non-Native user groups; every effort should be made to **involve local Native people throughout the management process for the Special Management Zone**.

Fishing Levels in Johnstone Strait

Probably the most important factor to determine the number of killer whales and their length of stay in Johnstone Strait is the presence of salmon stocks during the summer months. To ensure the continued presence of killer whales and to maintain their traditional pattern of use in that area, it is vital that healthy salmon stocks be maintained.

The Committee recommends that:

◆ 27 In order to ensure the continued presence of killer whales in Johnstone Strait, DFO should **continue to manage salmon stocks in a conservative manner** in this area.

Old Growth Values and Landscape Management in the Tsitika Valley

There was significant concern expressed through public input regarding the protection of old growth forest in the lower Tsitika valley; and, regarding the preservation of visual aesthetics at Robson Bight and in the Tsitika valley behind the Reserve. The public felt that the landscape values at Robson Bight have international significance, and that these values should not be marred by logging. It was felt that these values and their proper management need to be addressed appropriately by the Ministry of Forests.

REFERENCES

Briggs, D.A. 1991. *Impact of human activities on killer whales at the rubbing beaches in the Robson Bight Ecological Reserve and adjacent waters during the summers of 1987 and 1989.* Report prepared for BC Parks, Victoria, B.C. 25 p. + App.

BC Parks, and Department of Fisheries and Oceans. 1991. *Johnstone Strait Killer Whale Committee - Background Report.* 76 p. + App.

Hay & Company Consultants. 1991. *Shoreline Processes and Sediment Dispersion in Robson Bight, Johnstone Strait.* Prepared for Ministry of Forests and Dept. of Fisheries and Oceans, Vancouver, B.C. 21 p. + App. and Fig.

Lewis, T. 1989. *Robson Bight Ecological Reserve #111: Evaluation of Potential Impacts - Southwestern Boundary.* Prepared for BC Parks, Victoria, B.C.34 p. + Maps and App.

Toffan, G., and R.E. Taylor. 1991. *Johnstone Strait Killer Whale Committee - Public Response Summary.* Prepared by Gordon Toffan Fusion Consultant, Gibson, B.C., and Robin E. Taylor and Associates, Vancouver, B.C., for BC Parks, Victoria, B.C., and Dept of Fisheries and Oceans, Nanaimo, B.C. 30 p.

APPENDICES

APPENDIX A

JOHNSTONE STRAIT KILLER WHALE COMMITTEE
TERMS OF REFERENCE AND MEMBERSHIP

Introduction

Wide recognition now exists that Johnstone Strait is the best location in the world to see killer whales. Killer whales enter Johnstone Strait daily during summer to feed on salmon and while there they rub on pebble beaches and rest in the estuary at Robson Bight. Resting and rubbing is rarely witnessed elsewhere. Recently, concern has been raised by the public that potential threats exist to the whale's continued use of this region. The threats are posed from whale watching activity in Johnstone Strait and Robson Bight and from logging and commercial fishing activities in the Robson Bight area.

Given the importance of Johnstone Strait and Robson Bight to killer whales and the value of killer whales in this region to the public, measures should be taken to ensure that a suitable environment is provided for killer whales in this region. To that end, the Minister of the Department of Fisheries and Oceans (DFO) and the Minister of the British Columbia Ministry of Parks (BC Parks) have jointly appointed a task force to propose management options for the two levels of government. The task force will be called the Federal-Provincial Johnstone Strait Killer Whale Committee. The mandate of this Committee, its membership, the process that it will use are now described.

Mandate

The goal of the Department of Fisheries and Oceans and of the BC Ministry of Parks is to ensure that human activities do not discourage killer whales from using Johnstone Strait, and in particular from using the Robson Bight Ecological Reserve. To this end, the mandate of the Federal-Provincial Johnstone Strait Killer Whale Committee will be to propose management options that take into account the environmental requirements of killer whales in the region and the needs of various human resource users (e.g. whale watchers, loggers, fishermen). To achieve the mandate, the Committee will:

1. assess the importance of Johnstone Strait and of Robson Bight to killer whales;

2. assess the impact of human activities on killer whales and their environment;

3. suggest management options to the federal Minister of Fisheries and Oceans and to the B.C. Minister of Parks that will ensure the continued presence of killer whales in Johnstone Strait and at Robson Bight with consideration given to the requirements of the various human resource users.

For the waters outside of the Robson Bight area, only the impact of whale watching activities on killer whales will be examined. However, within the Robson Bight area, all human impacts (eg. whale watching, commercial fishing, logging) on killer whales will be considered. The proposed management options will be restricted to whale watching activities in Johnstone Strait and in the Robson Bight area and to the protection of killer whale habitat in the Robson Bight area.

Committee Membership

Committee members will represent the lead agencies, i.e. BC Parks and DFO, and provide expertise on whale biology, resource management in ecological reserves, commercial fisheries, tourism, forestry, and Native affairs. Committee members are as follows:

Dr. Louise Goulet Co-chairperson BC Parks, Victoria	Mr. Ed Lochbaum[1] Co-chairperson Fisheries and Oceans, Nanaimo
Dr. Ian McTaggart-Cowan Comm. on Whales and Whaling	Dr. John Ford Vancouver Aquarium
Mr. John Payne Fisheries and Oceans, Vancouver	Mr. Ron Lampard BC Parks, Parksville
Mr. Graeme Ellis Fisheries and Oceans, Nanaimo	Mr. Pieter Bekker Ministry of Tourism, Victoria
Mr. Nicholas May Aboriginal Affairs, Victoria	Dr. Dale Seip Ministry of Forest, Vancouver

An administrative coordinator will be hired to assist in researching background material, in the preparation of documents and correspondence, to arrange meetings and to undertake other duties to facilitate the mandate of the Committee.

Process

1. A *Background Report* will be prepared by the Committee that will assess the importance of Johnstone Strait and Robson Bight to killer whales, assess the impact of human activities on killer whales in Johnstone Strait and Robson Bight and propose management options that will ensure the continued presence of killer whales in Johnstone Strait while taking into account the requirements of the various human resource users in the region.

2. The *Background Report* will be distributed to the public and interested parties for comment.

3. The Committee will schedule individual meetings with selected interested parties.

4. The Committee will hold open houses/public meetings at tentatively three locations, Vancouver, Victoria and Port McNeill, to provide information on the issues and to receive written and oral comments on the *Background Report*.

5. The *Background Report* will be modified to take public input into account.

6. The final report of the Committee outlining management recommendations will be submitted to executives of the Department of Fisheries and Oceans and BC Parks. This report will be made available for public release.

[1] Mr. Lochbaum replaced the late Dr. Michael Bigg as co-chair of the Committee.

APPENDIX B

JOHNSTONE STRAIT KILLER WHALE COMMITTEE BACKGROUND REPORT EXECUTIVE SUMMARY

BACKGROUND

Western Johnstone Strait is known as one of the best areas in the world to view and study killer whales. In 1982, the province of British Columbia established a marine ecological reserve in the Strait to protect special killer whale habitat. An upland portion was added to this reserve in 1988-89, and the area is now known as Robson Bight (Michael Bigg) Ecological Reserve (#111).

Until 1970, killer whales shared the waters of Johnstone Strait mainly with merchant traffic and commercial fishing vessels. Since then, the scale of human activities in the region has grown dramatically and a highway completed in 1979 from Campbell River to Port Hardy now makes the area easily accessible. As a result, much more marine activity is observed in Johnstone Strait than in the past.

Recently, concerns have arisen that human activities such as whale watching, logging, and commercial fishing cumulatively threaten continued use of the area, particularly the rubbing beaches, by killer whales. In response to these concerns, the B.C. Minister of Parks (BC Parks) and the Minister of Department of Fisheries and Oceans (DFO) jointly appointed the Johnstone Strait Killer Whale Committee to provide a background report and to recommend management options to ensure the continued presence of killer whales in Johnstone Strait.

The Committee's background report defines issues and outlines preliminary recommendations for public review and comment. This document describes:

- the importance of Johnstone Strait and Robson Bight (Michael Bigg) Ecological Reserve (Robson Bight (Michael Bigg) Ecological Reserve) to killer whales;
- the patterns of human activities in these areas;
- the impacts that these activities may have on killer whales and their habitat; and
- management options and preliminary recommendations to deal with these issues.

This report is being distributed widely to the public and interest groups, including Native groups, in preparation for public meetings scheduled for June 1991.

IMPORTANCE OF JOHNSTONE STRAIT AND ROBSON BIGHT TO KILLER WHALES

Today, Johnstone Strait is widely known as the best location in the world to view and research killer whales in the wild. Up to 190 killer whales use Johnstone Strait each summer, primarily to feed on migrating salmon. Daily predictability of whale sightings and occasional concentrations of 50-100 whales in these sheltered waters offer unequalled opportunities for research and wildlife viewing of these complex and visually impressive animals.

Over 90% of the killer whales that enter Johnstone Strait each summer also frequent the Robson Bight area to socialize, rest and rub on pebble beaches. Rubbing behaviours have been rarely seen elsewhere and nowhere else have these behaviours been observed with such frequency or involving such large numbers of whales. Recent studies have shown that killer whales in Johnstone Strait spend as much as 20% of their time in Robson Bight (Michael Bigg) Ecological Reserve, with that time divided almost equally between the Bight itself, the rubbing beaches, and the remainder of the Reserve.

OVERVIEW OF HUMAN ACTIVITIES

Resource use in and around Johnstone Strait primarily involves forestry, commercial and sport fishing, tourism and transportation. In 1989, northern Vancouver Island accounted for 8% of the provincial timber harvest and 13% of the annual salmon catch. The area received over 270,000 visitors, in 1988, of which 8,000 watched killer whales in Johnstone Strait.

POTENTIAL SOURCES OF DISTURBANCE TO KILLER WHALES

The northern resident population of killer whales is increasing at a rate of 3% per year, a relatively rapid growth rate for species with a potential lifespan of 50-75 years. Currently, this growth rate does not reflect long-term negative effects of human activity in Johnstone Strait or elsewhere in their range. Disturbance of killer whales by commercial fishing and shipping outside the Reserve appears to be minimal. On the other hand, there are indications that viewing, research and photographic activities focused on the whales may result in short-term disturbance of whales. As the level of these activities increases, whale disturbance will also increase, especially in the absence of effective control.

Within Robson Bight (Michael Bigg) Ecological Reserve, a three-year study by BC Parks indicates that short-term disturbance takes place if killer whales are approached from land or water. Thus, it appears that killer whales have reduced their use of habitat in an area specifically set aside for their protection.

Commercial fishing in Robson Bight (Michael Bigg) Ecological Reserve, accounted for the majority of vessel approaches at or near the rubbing beaches and the majority of disturbance reactions by killer whales. Potential disturbance by whale watching boaters, commercial charters, researchers and photographers was low, partly due to education, management and the seasonal presence of ecological reserve information officers.

Land access and forestry activities are of concern because of their proximity to sensitive killer whale habitat. Logging is taking place both in the Tsitika watershed behind the Bight area, and in the Schmidt Creek drainage, directly east of the rubbing beaches. The primary concerns are the possibility of increased amounts of sediments in the water and improved access to the area on logging roads. The effects of logging adjacent to Robson Bight (Michael Bigg) Ecological Reserve on killer whales and whale habitat are as yet undetermined. Access via logging roads is a major concern though as it has been shown that whales leave the area when people are on shore. With one exception only, people so far have been observed to gain access to the Reserve beaches from the water as access via logging roads is currently difficult.

Threats to the integrity of killer whales' environment are often hard to detect because whales are at the top of the food chain and have a low reproductive rate. Despite research since the early 1970's, there are many unanswered questions regarding the biological requirements of these whales, such as "How important are Johnstone Strait and Robson Bight in the ecology of this population of killer whales?" Until such basic questions can be answered, management of human activities with short-term and potential long-term impacts on the whales must be conservative.

In Alaska, Hawaii and Baja California, vessel traffic has discouraged other species of whales from using breeding and feeding habitats. There is a concern lest a similar phenomenon occurs in Johnstone Strait. However, we can do much to mitigate negative impacts.

MAJOR MANAGEMENT CONSIDERATIONS

The key to protecting killer whales, besides ensuring the continued presence of salmon stocks and minimizing water pollution, is the management of people. Whether they are engaged in whale watching, logging or fishing, people are the most likely agents of change to killer whale habitat in Johnstone Strait. To manage such changes, a number of approaches can be used including: education, research, resource management, legislation and enforcement.

Education has been the most effective measure in reducing human impacts on killer whale populations in Johnstone Strait. Education measures are flexible, relatively fast to implement, and can be tailored to involve the very people who interact with whales as well as the general public. An education program is important as a continuing management tool to ensure the protection of whales, regardless of other methods used.

Long-term **research** is necessary to improve knowledge of these whales and to learn how best to minimize impacts to them and their habitat. Long-term research in Johnstone Strait has yielded the most significant information on killer whale populations in the world. However, many gaps in knowledge of their life history still exist, and need to be addressed to ensure whale protection.

Resource management is necessary in Johnstone Strait to balance the needs of resource users while minimizing impacts on killer whales and their habitat. When changes are required to the ways that resource harvesting takes place, decisions regarding resource management are best undertaken by involving user groups, both Native and non-Native, and the public. In addition to major effects from any individual factor, cumulative effects of all human activity in the region may cause damage.

Legislation and effective enforcement provides the "last resort" protection of killer whales and their habitat. Legislation can further minimize impacts of human activities and can strengthen education, research and resource management programs.

MANAGEMENT OPTIONS

A range of management options is presented for each major resource use likely to have an impact on killer whales in Johnstone Strait and at Robson Bight. Each option can be used in isolation or potentially in conjunction with other measures. These options do not necessarily represent the views of DFO or BC Parks but are offered as a range of possibilities to solicit public feedback.

COMMERCIAL FISHING

Some of the potential options for managing commercial fishing within Robson Bight (Michael Bigg) Ecological Reserve include:

- continue commercial fishing as at present;
- implement an education program for Native and non-Native commercial fishermen to reduce the impact of vessel traffic near whales;
- improve Marine Mammal regulations to minimize whale disturbance;
- restrict commercial fishing and mooring at the rubbing beaches and in the Bight itself, or in the entire Reserve.

WHALE WATCHING

Some of the options for managing whale watching in Johnstone Strait include:

- expand the public education program;
- establish a DFO seasonal program to inform whale watchers of appropriate conduct while whale watching, and implement whale watching guidelines or regulations;
- develop a special management area in Johnstone Strait;
- establish a licensing program for whale watching charters (with or without limited entry), or facilitate self-policing;
- form an advisory committee to provide a forum for public and user concerns;
- improve whale watching guidelines and/or Marine Mammal regulations;
- develop an appropriate permit system for researchers and photographers.

Options for Robson Bight include:

- maintain existing programs in Robson Bight (Michael Bigg) Ecological Reserve, ie. visitor education, research funding, and a permit system for researchers and photographers;
- close all or part of the Reserve to whale watching except by permit;
- delegate DFO to implement Reserve guidelines for whale watching or confer Fisheries Act powers to BC Parks to enforce federal guidelines or regulations for whale watching.

LAND ACCESS

Some of the options to limit potential disturbance of killer whales due to land access include:

- establish a land-based whale watching park at a site removed from the Reserve to reduce pressure on whales in the Reserve;
- continue road building but monitor gated access;
- defer or prohibit road construction near the Reserve;
- extend the Reserve eastward to limit access to the rubbing beaches and/or southward to limit access to the Bight.

FOREST MANAGEMENT

Some of the options for forest management include:

- continue harvesting as planned in the Tsitika and/or Schmidt drainages;
- include Schmidt Creek within the Tsitika Follow-up Committee's mandate;
- require special logging practices and monitoring to protect killer whales and their habitat;
- defer logging in the lower Tsitika and/or Schmidt drainages until further research is completed;
- discontinue logging in the lower Tsitika and/or Schmidt drainages;
- increase size of protected area to include visual backdrop to Robson Bight (Michael Bigg) Ecological Reserve;
- extend Robson Bight (Michael Bigg) Ecological Reserve eastward to include lower Schmidt Creek and/or southward of Bight.

OTHERS

- establish an ongoing advisory committee representing DFO, BC Parks, Native and non-Native user groups and the public to help implement the recommendations of this report, and to develop specific guidelines for managing whale viewing, fishing and other activities near the whales.

As with the present committee, objectives of the advisory group would be to minimize conflicts between human and whale activities in the area, and to ensure the continued and traditional presence of killer whales in Johnstone Strait and Robson Bight. The advisory group would also monitor and periodically review management practices, identify and review research projects, and maintain lines of communication for more effective resource management.

PRELIMINARY RECOMMENDATIONS

Where resource use conflicts with either killer whales, their habitat or other resource uses, the Johnstone Strait Killer Whale Committee needs public and user input prior to making final recommendations on resource management. However, proposals related to education, research and legislation can be more specific as these do not involve user groups to the same extent.

Hence, preliminary recommendations are presented here to solicit feedback from users and the general public. We fully expect modifications and/or new recommendations as a result of public consultation.

EDUCATION

Education is the most effective tool to minimize disturbance of killer whales, since more disturbance results from lack of awareness rather than poor intentions. Once informed, most people are generally very willing to comply with whale watching guidelines. Specific recommendations for education are as follows:

1. DFO should:

   — produce and widely distribute a pamphlet on whales and whale watching guidelines; and
   — consider establishing educational programs in Johnstone Strait for commercial and recreational fishermen regarding whales and whale watching.

2. BC Parks should:

   — continue to distribute its pamphlet on whale watching guidelines in Robson Bight;
   — maintain the visitor information program at Robson Bight; and
   — consider offering slide or film presentations at campgrounds and communities in the vicinity to provide information on killer whales and proper whale watching behaviour.

3. Jointly DFO and BC Parks should:

   — conduct special educational programs in communities on northern Vancouver Island, especially prior to whale watching season; and
   — establish and manage a whale watching park in Johnstone Strait, away from Robson Bight (Michael Bigg) Ecological Reserve.

RESEARCH

Johnstone Strait and Robson Bight are globally significant locations for killer whale research. It is vital to support long-term research and to encourage new projects to fill remaining gaps in our knowledge of killer whales which are critical to adequate management. Specific recommendations for research are as follows:

1. DFO should continue to monitor killer whale populations, and support and encourage new killer whale research, including the establishment of an endowment fund, involving private sector participation, to promote research projects from Canadian universities.

2. BC Parks should continue to fund research into impacts of human activities on killer whales and their habitat at Robson Bight.

3. Jointly, DFO and BC Parks should:
   - establish a facility in Johnstone Strait to support both researchers and information staff and to promote the exchange of information regarding killer whales; and
   - cooperate with local universities and other whale research groups, such as West Coast Whale Research and the Vancouver Aquarium, in the formation of an association to promote information exchange and support research on killer whales.

LEGISLATION

Effective legislation is an important component of an overall management strategy for protecting killer whales. Improvements to existing legislation may be required. Specific recommendations are as follows:

1. DFO should, subsequent to the review of current Marine Mammal legislation, consider a more precise definition of whale "harassment" to provide adequate protection to whales from disturbance.

2. BC Parks should improve the ecological reserve regulations to better control land activities at Robson Bight.

RESOURCE MANAGEMENT

As stated earlier, recommendations regarding resource management can only be made after public consultation. The exception is the recommendation for an ongoing advisory committee discussed above in Management Options. The major issues that need to be addressed are related to human access to the Reserve, by land or by water; commercial fishing activity in the Reserve; and, whale watching activities in Johnstone Strait.

PUBLIC INPUT

Western Johnstone Strait and the Robson Bight (Michael Bigg) Ecological Reserve are outstanding special features of provincial and international significance in terms of killer whale research and viewing opportunities. In managing resource uses, we face some difficult issues. We would like your advice on how these issues should be addressed. It is important to view these issues ecologically, as it may be the collective impact of human activities which may disturb the whales or damage their habitat. Please help us to answer the question: "How can we best ensure that killer whales continue to use Johnstone Strait and Robson Bight in the spectacular concentrations and unique manner that they do presently?"

APPENDIX C

SUGGESTED STRUCTURE AND MEMBERSHIP OF THE JOINT MANAGEMENT COMMITTEE ON KILLER WHALES

Lead Agencies

The Killer Whale Joint Management Committee will report to:

. the Regional Director-General of the Department of Fisheries and Oceans (DFO);

and,

. the Regional Director, South Coast Region, BC Parks, Ministry of Environment, Lands and Parks

Membership

The Committee will be chaired for one year alternatively by:

. representative from DFO, from the Vancouver Island Region

and,

. representative from BC Parks, from the South Coast Region

Other members may be selected from other government agencies, research institutions and other groups to provide expertise and input on the following issues:

. Forestry
. Commercial fishing
. Whale watching
. Native issues
. Killer whale research
. Tourism and landscape management
. Information/education programs

It may also prove useful to include representatives from the Regional District of Mount Waddington and from the Tsitika Follow-up Committee.

A Scientific Sub-Committee should be part of this group to advise on research issues and liaise with DFO and BC Parks on the issuing of research permits, and liaise with universities and other research groups regarding killer whale research.

Terms of Reference

The Joint Management Committee will:

1. Provide a forum for the public and all interested parties to discuss their concerns and to develop mutually acceptable long-term resource management strategies for the Special Management Zone.

2. Develop a detailed implementation program for those recommendations of the Johnstone Strait Killer Whale Committee approved by government, with full integration of the management efforts provided by BC Parks, DFO or other groups.

3. Develop and oversee a comprehensive monitoring program to measure and document killer whale presence in, and use of, the Special Management Zone over time.

4. Supervise the monitoring program and report on the progress of implementation of the accepted recommendations to ensure that the approved measures and schedule are maintained. Modify this program as required.

5. Recommend modifications to the Johnstone Strait Killer Whale Committee's recommendations and develop new recommendations where necessary to ensure that protective measures for killer whales and their habitat remain adequate and effective.

6. Review all killer whale research and photography/film making proposals for the Johnstone Strait area, make recommendations regarding their appropriateness and the issuing of permits, including identifying restrictions associated with these permits.

NB. Some flexibility needs to be maintained regarding membership, structure and terms of Reference for this Committee. It will be up to the two co-chairpersons of this Committee to determine what is most appropriate, within the spirit of the recommendations made by the Johnstone Strait Killer Whale Committee.

To ensure continuity, current members of the Johnstone Strait Killer Whale Committee should be chosen as co-chairpersons for the Joint Management Committee. The current co-chair of the Johnstone Strait Killer Whale Committee, Mr. Ed Lochbaum, DFO, Nanaimo; and Mr. Ron Lampard, District Manager for BC Parks, Parksville, would be the most appropriate persons for this task, as they are respectively responsible for the management of fisheries and of the Robson Bight (Michael Bigg) Ecological Reserve.

Queen's Printer for British Columbia©
Victoria, 1992
MR 2378